



# **Michigan Contingency Plan for the Management of Raccoon Strain Rabies**



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## Goal:

- To prevent raccoon strain rabies from becoming established in Michigan

## Objectives:

- Develop a comprehensive contingency plan for the management of a raccoon strain rabies outbreak in Michigan.
- Implement and maintain an enhanced rabies surveillance system for the early detection of a raccoon strain rabies outbreak.
- Prepare local communities for raccoon strain rabies control activities.
- Respond to a focal outbreak of raccoon strain rabies in such a manner as to contain and eliminate the rabies virus before it spreads to the surrounding raccoon population.

## Procedures:

### Phase I

Finalize a Contingency Plan for the Management of Raccoon strain rabies in Michigan, initiate an enhanced rabies surveillance program, and prepare the local communities for raccoon strain rabies control activities.

- A. Finalize a Contingency Plan that incorporates all elements necessary for implementing a raccoon strain rabies control program to manage a focal introduction of raccoon strain rabies in Michigan. These elements will include a rabies surveillance program, as well as communications, logistics, and disease management plans.
- B. Conduct a training program for local Animal Control Officers, Nuisance Wildlife Control Personnel, Veterinarians, Wildlife Rehabilitators, Conservation Officers, Police Officers, local public health staff, DNR Wildlife Biologists, Technicians and Supervisors and any other personnel that may be involved in responding to potential rabid animal cases. This training will include information regarding the proper identification, collection and submission of rabies suspect animals to the MDCH Rabies Laboratory.
- C. Through educational efforts, prepare local communities, furharvesters (hunters and trappers), and outdoor media for a raccoon strain rabies control program during a raccoon strain rabies outbreak in Michigan. This may include community meetings, pamphlets and brochures, mailings and letters, individual contacts, phone hotline, website, and press information.
- D. Coordinate and implement a **LEVEL 1** rabies surveillance program, including the development of a local communications plan and identification of resources required for a **LEVEL 1** surveillance program.

**LEVEL 1 Rabies Surveillance Program:** This surveillance level has been designed to detect a focal introduction of raccoon strain rabies during the earliest stages of an outbreak, without creating unnecessary burdens on local, county and state parties responsible for rabies management and control. Experience with fox and raccoon strain rabies outbreaks in other states has demonstrated that the most sensitive and efficient surveillance for the disease results from efforts to examine the sick and abnormally

behaving animals as they are reported, rather than the random collection of trapped animals. This is because rabies can only be diagnosed during or immediately preceding the relatively short clinical period, and not during the relatively long incubation period. This surveillance system should include the collection and submission of the following samples:

- Category 1: All mammals that have bitten, scratched or otherwise potentially exposed a human to rabies, based on the species involved and the animal's behavior at the time of exposure.
- Category 2: All rabies vector species (raccoons, foxes, and skunks) and other terrestrial carnivores that bite or otherwise exposed a domestic animal, regardless of that domestic animal's vaccination status.
- Category 3: Other rabies vector species that appear sick or are expressing an abnormal behavior such as unusual aggressiveness or loss of fear towards humans or domestic animals, a wobbly gait and/or lack of coordination, signs of paralysis, or other central nervous system (CNS) symptoms. Also included in this category are road-kill rabies vector species.

The first two categories are components of the traditional rabies-control responsibilities of local health agencies in many states. The identification of the correct animals to include in the third category is critical to the sensitivity of the surveillance. A successful effort will require coordinated efforts of the county health department, local law enforcement and animal control authorities, and the Michigan Department of Natural Resources. If surveillance activity in Category 3 is effectively directed at animals displaying signs of rabies infection, the demand should not overwhelm the capacity of local or state resources.

To implement a rabies control program such as described in this proposal, this enhanced rabies surveillance must be initiated before the disease becomes endemic in wildlife, and must be sustained for as long as rabies continues to be reported in terrestrial animals in regions surrounding the rabies-free area. Because raccoon strain rabies also affects other terrestrial carnivores and unvaccinated domestic animals, surveillance cannot be limited to raccoons alone, and in fact, the presence of the raccoon strain of the virus in Michigan may be detected first in other species such as cats or dogs.

***Note: The submission of bats in contact with humans and domestic animals must continue to be part of the regular rabies control activities. However, bat rabies is an independent cycle from raccoon strain rabies, and a rabies case in a bat will not initiate a rabies control response.***



***Because rabies is occasionally transmitted from a bat to a terrestrial mammal, antigenic typing of the rabies variant must immediately be performed when a rabid terrestrial animal is identified, so that a rabies control response can be initiated only if the raccoon strain rabies variant is responsible.***

All non-bat and non-skunk positive specimens detected at the MDCH Rabies Laboratory are typed to determine the source of the rabies virus. Detection of raccoon strain rabies in any terrestrial mammal will activate Phase II.

## Phase II:

Containment of the raccoon strain rabies outbreak within the smallest geographic area. This Phase will continue until such time as the aerial Oral Rabies Vaccination (ORV) program (Phase III) is able to commence (expected to be 2-6 weeks).

A. Upon detection of the first case of raccoon strain rabies, implement a **LEVEL 2** rabies surveillance program to evaluate the extent of the raccoon strain rabies outbreak. At the written request of the state, personnel and equipment from the USDA-Wildlife Services will respond and coordinate the surveillance programs in cooperation with state agencies (PROPOSED).

1. A 1-5-mile\* radius Primary Surveillance Zone (Zone A, Figure 1) will be established around the point where the positive was detected. The area covered by the zone is not intended to be fixed as a circle and should take into consideration geographic barriers and natural habitats likely to harbor appropriate vector species. Activities in this zone will include:

- trap and euthanize all non-domestic rabies vector species (MDNR has license for the use of controlled substances for euthanasia). The primary purpose of this exercise is to minimize the spread of the virus by removing animals that are either clinically ill or are currently incubating the disease. The secondary purpose is to reduce the local population sufficiently to reduce density-dependent stress factors such as competition for resources, thereby reducing the contact rate between any remaining diseased raccoons and healthy raccoons living within that population, as well as reducing the likelihood of local raccoons dispersing from the area. The animals moving in will be exposed to ORV (see below), creating a protected, immunized population of animals within this zone. An alternative approach would be trap, vaccinate and release (TVR) of all non-domestic rabies vector species. The decision on which approach to take will be made during the assessment of the outbreak as a coordinated effort between the National Rabies Coordinator, Wildlife Services, USDA-APHIS, in consultation with other appropriate federal, state and local agencies.

- surveillance for found dead, road kill, wounded (evidence of recent aggressive behavior) and neurologically symptomatic vector species (raccoons, foxes, skunks, woodchucks and other terrestrial mammals). Accomplished by state and local agency personnel (yet unnamed) performing active surveillance in the area.

- turn over inadvertently trapped domestic animals to local Animal Control offices. In accordance with existing law, all animals should be held for a minimum of 4 days. Animals reclaimed by owners should be handled in accordance with the Rabies Compendium (i.e. assessment of vaccination status, compliance with recommendations for observation, quarantine, etc.). Animals not reclaimed by an owner should be euthanized. Testing for rabies is not recommended unless the animal is displaying unusual neurologic behavior.

- manually distribute ORV. Include wildlife rehabilitators and NWCs if TVR alternative is employed.

- establish a new 1-5-mile Primary Surveillance zone (Zone A) when a new positive is detected



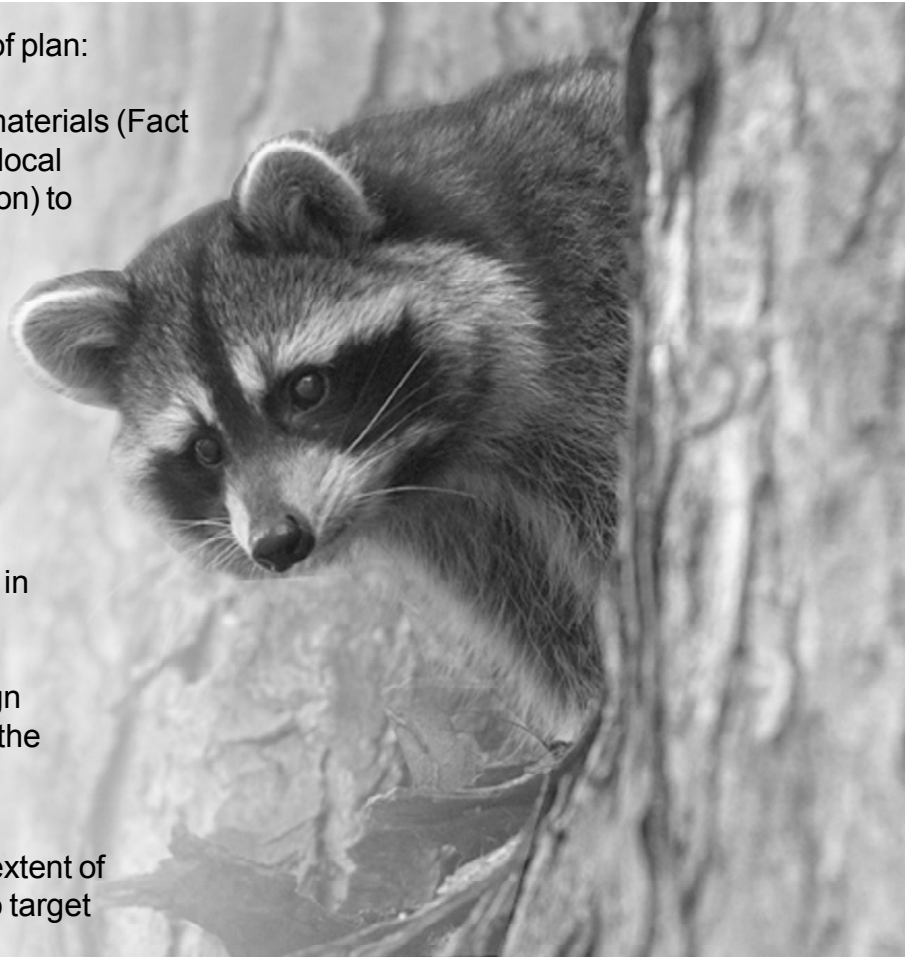
2. A 5-10-mile\* radius Secondary Surveillance Zone (the Primary Surveillance Zone plus 5 miles, Zone B, Figure 1) will be established around the point where the positive was detected. The area covered by this zone will take into consideration the same issues as A.1 above. Activities in this zone will include:
  - surveillance for found dead, road kill, wounded (evidence of recent aggressive behavior) and neurologically symptomatic vector species (raccoons, foxes, skunks, woodchucks and other terrestrial mammals). Accomplished by state and local agency personnel (yet unnamed) performing active surveillance in the area.
  - increased communications with Nuisance Wildlife Control personnel (NWCOS) and wildlife rehabilitators to enhance submissions of appropriate vector species. Coordinated through Communications component of plan (See Phase II, part B).
3. Testing of specimens and strain typing of positives collected in Zones A & B to determine the extent of distribution of raccoon strain of the virus. Testing will be performed at MDCH Bureau of Laboratories using direct fluorescent antibody (DFA) or molecular detection techniques.

*\*NOTE: Depending on where the first raccoon strain positive animal is detected, sizes of the primary and secondary zones may vary in size. For example, if it is detected in an urban environment, the radii of the containment and enhanced surveillance zones will be smaller due to decreased raccoon daily movements and home range size in urban environments. Other factors such as natural or unnatural barriers will also be taken into consideration. The ultimate decision on the sizes of these zones will be made as a coordinated effort between the National Rabies Coordinator, Wildlife Services, USDA-APHIS, in consultation with other appropriate federal, state and local agencies.*

B. Activate Communications component of plan:

1. Distribution of previously prepared materials (Fact sheets, press releases, state and/or local agency emergency contact information) to local jurisdictions.
2. Immediate discontinuation of wildlife rehabilitation and live release of rabies vector species by NWCOS in affected county(s) will be recommended.
3. Emphasize the message of the importance of **LEVEL 1** surveillance in the rest of the state.
4. Conduct a public education campaign regarding raccoon strain rabies and the raccoon rabies control program.

C. Review results of testing to determine extent of distribution of raccoon strain in order to target area for Phase III.



## Phase III

Elimination of the rabies virus from the infected raccoon population located within the designated rabies control area.

A. Initiate an aerial ORV Program within the rabies control area designated in Phase II. ORV, aircraft, and personnel from USDA-Wildlife Services will be provided within 2-6 weeks following a request from the state (PROPOSED).

B. Initiate a **LEVEL 3** rabies surveillance program six weeks following the aerial ORV campaign to evaluate vaccination rate of raccoons within the designated rabies control area.

1. Trap and collect specimens from vector species for a period of 10 days in areas of aerial ORV application. The purpose of this would be to assess the effectiveness of the ORV campaign.

2. Testing of specimens will consist of the following:  
- tooth extraction or serum specimens examined for evidence of anti-rabies antibodies (vaccination status). This is necessary to determine the level of herd immunity of the raccoon population residing within the designated rabies control area



C. Continue activities of **LEVEL 2** surveillance described in Phase II.A.2 for a period of six months in the affected area following the aerial ORV campaign. These activities will include:

- surveillance for dead, road kill and neurologically symptomatic vector species (raccoons, foxes, skunks, woodchucks and other terrestrial mammals). Accomplished by personnel (yet unnamed) performing active surveillance in the area.

- increased communications with Nuisance Wildlife Control personnel (NWCOS) and wildlife rehabilitators to enhance submissions of appropriate vector species. Coordinated through Communications component of plan (See Phase II, part B).





## Phase IV

Evaluate data collected over the period following the initial raccoon strain rabies case and determine if the Raccoon Rabies Control Program was successful at eliminating the raccoon strain rabies outbreak. Time frame could be up to 12 months and would depend on what time of year the positive was detected. Need to account for winter period when animals are inactive.



### Next Steps

A plan will be developed for the second year of the contingency plan and a request for money will be made following this budget determination.

USDA Wildlife Services-Michigan director will work on conversion of this plan so that it can be useful for other areas in the country.

### References:

Raccoon Rabies Contingency Plan—Ohio, revised January, 2002.

Use of a Point-Source Infection Control Program for the Management of Raccoon Rabies on Long Island. NYS Department of Health, June 1, 1998.

Point Infection Control Tactic in the Event of the First Case/Cases of Raccoon Rabies in Ontario. Ontario Ministry of Natural Resources, November 10, 1998.

Raccoon Rabies Contingency Plan for the Niagara Region—June, 1994.

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